Back pain, mechanical musculoskeletal problems, local soft tissue disorders

THU0482

HUMAN LUMBAR SPINE FACET JOINT OSTEOARTHRITIS DISPLAYS PREDOMINANT NGF EXPRESSION AND SIGNALING IN CAPSULAR SYNOVIUM AND SUBCHONDRAL BONE MARROW TISSUES INDEPENDENT OF OSTEOARTHRITIS GRADE

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Background: Increased nerve growth factor (NGF) levels are associated with chronic pain conditions, including low back pain and osteoarthritis (OA). NGF signalling through its receptor TrkA regulates pro-inflammatory neurotransmitters such as substance P (SP). Inhibition of NGF has shown therapeutic efficacy in knee OA [1] and chronic back pain [2], but trials have revealed rare cases of rapidly progressive OA of peripheral joints.

Objectives: To describe the tissue distribution of NGF, TrkA, SP and macrophages in facet joint osteoarthritis (FJOA) of the lumbar spine and their association with FJOA grade.

Methods: FJOA specimens were obtained by facetectomy from patients undergoing intervertebral fusion ($n=10$, average age 69 years, 5 males). FJOA severity and presence of synovial hypertrophy was graded using preoperative magnetic resonance imaging (MRI). Relative abundance of NGF, CD68 (macrophages), TrkA and SP in capsular synovium (SY), cartilage (CL), subchondral bone (SB) and subchondral bone marrow (BM) was evaluated semi-quantitatively on a scale ranging from 0-3 using immunohistochemistry. Association between imaging parameters and tissue expression was determined using Pearson correlation analysis.

Results: Synovial hypertrophy as determined by MRI was present in six cases (60%) and median Weishaupt grade of FJOA was 2 (1.5-3) corresponding with moderate to severe OA. NGF was abundantly expressed in SY (3 [0.5-3]) and to a lesser extent in BM tissues (2 [1-3]), whereas TrkA expression was detected in BM exclusively. NGF abundance in SY and BM showed a strong correlation ($r=0.94$), but did not associate with synovial hypertrophy or FJOA severity. CD68+ macrophages were highly abundant in BM (3 [1.5-3]) and sparse in SY tissues (0.5 [0-1]). The relative abundance of macrophages and NGF was strongly correlated in SY tissue only ($r = 0.78$). SP as a downstream mediator of NGF signalling was also abundantly expressed in SY, CL and BM tissues. Tissue distributions of CD68, NGF and SP are summarized in the figure.

Conclusion: NGF expression and signalling is evident in lumbar spine FJOA specimens, but not strongly associated with synovial hypertrophy or disease severity. These results are in agreement with recent studies of human knee OA, which have shown osteochondral NGF expression as a hallmark of symptomatic OA independently of chondropathy or synovitis [3].

Abstract THU0482 – Figure 1.

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THU0483

DEMOGRAPHICS AND CLINICAL CHARACTERISTICS OF A NATIONAL COHORT OF 280 PATIENTS WITH JOINT HYPERMOBILITY SYNDROME, THEIR SOCIOECONOMIC BURDEN AND THE PERFORMANCE OF THE 2017 INTERNATIONAL CLASSIFICATION CRITERIA OF THE EHLERS DANLOS SYNDROMES

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Background: Joint hypermobility syndromes (JHS) encompass a spectrum ranging from asymptomatic joint hypermobility through to Ehlers Danlos syndromes (EDS) including hypermobile EDS (equivalent to the former diagnosis of EDS type 3). Many EDS patients have significant musculoskeletal pain and other systemic comorbidities including autonomic, bowel and bladder dysfunction. We present data from a cohort of patients with JHS referred to our tertiary centre from December 2015 to May 2017.

Objectives: To increase the awareness of the hypermobility syndrome among general rheumatologists and other health professionals. To assess the impact of this condition on the patient general health and their work disability.

To reflect on the 2017 Ehlers Danlos International Criteria

Methods: We undertook a retrospective analysis of medical records. Statistical analysis utilised non parametric Chi squared analysis for between group comparisons

Results: There were 280 patients: 253 patients (90%) were female and 27 were male (10%) with a female to male ratio of 9:1. The age distribution was from 18 to 66 (mean age 42 years). The age at which they were first diagnosed ranged from 4 to 55 (mean age 29 years); 279 (96%) had Ehlers Danlos Syndrome type 3, one patient had Marfan's, one Kyphoscoliotic EDS, and two patients had Tenascin X deficiency. Family history of hypermobility was reported among 185 patients (66%). In relation to the autonomic dysfunction, 185 patients (66%) had orthostatic intolerance, 126 (45%) had gastrointestinal problems; 109 (39%) had bladder dysfunction with 2.5% of them requiring catheterisation. Chronic joint and muscle pain was reported in 91%; 49.6% of these used opioid analgesia long term. One hundred and twenty patients (43%) had work disability.

Patients taking opioids were more likely to have work disability: 54% vs. 34% ($p<0.001$). Bladder problems were more common in the group taking opioids (46% vs 32%; $p<0.02$). A significant association between orthostatic intolerance and bowel problems was observed. Almost half (47%) of those with orthostatic intolerance had bowel problems, compared to only 19% without ($p<0.001$). Patients with bowel problems were more likely to have bladder problems compared to those without bowel problems ($P<0.001$).

Conclusion: The 2017 EDS International Classification defined thirteen subtypes of EDS. The molecular basis for the hypermobile Ehlers Danlos Syndrome (previously Ehlers Danlos Syndrome type 3) remains to be identified and diagnosis is clinical, preferentially characterised by joint hypermobility, skin hyper extensibility and tissue fragility. However, this study shows that systemic manifestations are frequently observed and they tend to appear in clusters.

As important is the diagnosis of joint hypermobility, the same is the recognition of every aspect of hypermobility syndrome. A tailored multidisciplinary approach can potentially improve the quality of life and lessen the socioeconomic and NHS burden of these patients. In addition we would strongly discourage use of opioids in patients with hypermobility.

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THU0484

ESTIMATION OF PATIENT ACCEPTABLE SYMPTOM STATE FOR PATIENT-REPORTED OUTCOMES BETWEEN 2 POPULATIONS OF PATIENTS WITH NON-SPECIFIC CHRONIC LOW BACK PAIN

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Background: Clinical relevance of commonly used patient-reported outcomes (PROs) is unclear in people with non-specific chronic low back pain (cLBP) (1).

Objectives: To estimate and compare patient acceptable symptom state (PASS) at 1 month post-intervention for 4 PROs between 2 populations of patients with non-specific cLBP and to determine which baseline variables contribute to having an acceptable symptom state at 1 month.

Methods: Overall, we included 256 patients: 135 patients with cLBP and active discopathy participated in a randomized controlled trial assessing the efficacy on pain at 1 month of a single glucocorticoid intradiscal injection compared to contrast alone (2), and 121 patients with cLBP and without active discopathy participated in a randomized controlled trial assessing the efficacy on pain at 4 months of 12 sessions of immersive virtual reality (VR) compared to usual care (3). Using an anchor-based method, PASS estimates for PROs were obtained using the 75th percentile method (4). Logistic regression was used to determine baseline variables contributing to achieving PASS at 1 month.

Results: At 1 month, 137/256 (53.52%) participants self-rated their health as acceptable. In the whole population, PASS (95% IC) were 47.50 (40.00 to 50.00) for the lumbar-pain VAS, 30.50 (30.00 to 40.00) for the radicular-pain VAS, 39.27 (33.60 to 45.26) for the QUEBEC score, 9.95 (9.16 to 10.00) for the HAD anxiety subscale and 6.70 (6.00 to 8.00) for the HAD depression subscale. The PASS estimates did not differ between the 2 populations of cLBP patients for any of the PRO. The only baseline variable contributing to having an acceptable symptom state at 1 month was symptom intensity.

Conclusion: PASS estimates at 1 month did not vary across 2 independent samples of people with cLBP and 2 distinct nociceptive sources of cLBP. The main contributor of the PASS was symptom intensity at baseline. Our findings can be useful in interpreting the clinical relevance of PROs values.

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THU0485

EFFICACY OF EXTRACORPOREAL SHOCK-WAVE THERAPY IN THE TREATMENT OF SHOULDER CALCIFIC TENDINITIS IN INSUFFICIENT RESPONDERS TO LOCAL STEROID INJECTION THERAPY: A RETROSPECTIVE ANALYSIS

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Background: Calcific tendinitis (CT) results from the deposition of calcium hydroxyapatite crystals in periarticular muscular attachments, and most commonly affects the tendons of the shoulder (1). Extracorporeal shock wave therapy (ESWT) is based on the use of shock waves, and used for pain reduction and tissue healing (2).

Objectives: The aim of this analysis is to demonstrate the effects of ESWT in patients with shoulder CT with inefficient response to local steroid injection.

Methods: 2-year data of shoulder outpatient clinic were scanned. 10 patients with shoulder calcific tendinitis without satisfying response to local steroid injection (less than 50% decrease in pain-visual analogue scale (VAS) score) who were treated with ESWT were reviewed.

Results: 10 patients (9 women, 1 man) fulfilled the inclusion criteria. The mean patient age was 51.3 years (range, 32-70 years) and body mass index was 26.2 kg/m². The affected shoulder was left in 6 (60%) patients and right in 4 (40%). The calcific tendinitis involved the dominant side in 5 (50%) patients and non-dominant side in other 5 (50%). All patients had one peritendinous local steroid injection-2 ml 2% prilocain and 1 ml steroid (5 mg of betamethasone dipropionate + 2 mg betamethasone sodium phosphate). Mean time from symptom onset to the ESWT treatment was 3.5 weeks (range, 2-6 weeks). Mean VAS score was 9 and Shoulder Disability Index (SDI) score was 84.4 before ESWT treatment. ESWT system Elmed-Vibrolith ver.3.0 was used in the treatments, each treatment consisted 2000 shocks with a frequency of 150 shocks a minute with maximum tolerable energy density (range, 3.2-3.4 bar). Mean ESWT session was 3.3 (8 patients had 3, 1 patient had 4 and 1 patient had 5 sessions of treatment). Mean post-treatment VAS score was 4.2 (53.3% decrease) and SDI score was 43.8 (48.1% decrease) which were evaluated after the last ESWT session.

Conclusion: With its good tolerance and safety, ESWT might be an alternative treatment method for calcific tendinitis of the shoulder. Although limited number of patients, we hope that this study might give rise to future randomized-controlled studies about the efficacy of ESWT in acute-subacute shoulder calcific tendinitis.

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THU0486

PREGABALIN EFFICACY IN THE TREATMENT OF CHRONIC PAIN IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background:

Objectives: To study the efficacy of Pregabalin in the treatment of chronic pain in patients with rheumatoid arthritis.

Methods: We enrolled 80 patients with rheumatoid arthritis. Screening with the DN4 neuropathic pain questionnaire showed that 31% of patients (n=25) had a neuropathic pain component (NPC+), DN4>4 points. Mean age was 57,0 ±7,49 years, disease duration - 9.87 ± 9.5 years, DAS28 disease activity - 5.5 ± 1.3, VAS pain intensity - 73.1 ± 17.4. All patients were randomized into two groups: group I received pregabalin in combination with DMARDs; group II received DMARDs only. All patients underwent a clinical and neurological examination, disease activity was assessed with the DAS28 index, the effect of treatment on neuropathic pain was assessed with the DN4 and Pain DETECT questionnaires, pain intensity at rest – with the VAS scale.

Results: There were no significant differences between groups before the start of the study (Table 1)

Abstract THU0486 –Table 1.

	Group I	Group II	P<0.05
Mean age (years)	58.2±9.15	56.2 ±6.69	0.6
Disease duration (years)	13.6 ±11.45	7.07 ±8.42	0.3
DAS28	5.3±0.6	4.8±1.6	0.4
DN4 (points)	5,2±1.1	5.0±0.6	0.7
Pain Detect (points)	17.0±3.2	18.2±2.9	0.4
HADS-Anxiety	6.8±3.2	12.0±4.8	0.7
HADS-Depression	8.4±2.2	8.0±2.6	0.7
VAS, mm	77.0±13.5	75.2 ±14.7	0.5

Positive dynamics of VAS pain intensity was observed in both groups [Fig. 1] (77.0 ± 13.5 vs 75.2 ± 14.7, at week 2 48.8 ± 14.2 vs 72.9 ±